

OVERSEAS USE OF SURGICAL LAPAROSCOPY FOR FERTILITY MANAGEMENT

Agency for International Development Support of Endoscopic
Training, Supplies, and Services to Developing Countries

By

R. T. Ravenholt, M.D., M.P.H.
Director, Office of Population
U.S. Agency for International Development

Andrew T. Wiley, M.D., M.P.H.
Family Planning Services Division
Office of Population

May 1979

USAID'S OVERSEAS SUPPORT OF LAPAROSCOPY

In late summer 1971, Dr. Wheelless presented his experience with laparoscopic sterilization under local anesthesia to Dr. Ravenholt; and then to the staff of the Office of Population, USAID, and it was agreed that this method probably had potential for application in developing countries.

A month later the Office of Population called together an ad hoc committee of experts who recommended full exploration of laparoscopic sterilization as a potential outpatient services in developing countries. On the basis of this meeting, AID began to provide funds to set up an International Sterilization Training Project (ISTP) to train developing country personnel in such advanced techniques of female sterilization and to provide laparoscopic equipment.

Beginning in 1972 the Office of Population, worked with Johns Hopkins University and other universities to form the Program of International Education in Gynecology and Obstetrics (PIEGO). Its primary purpose was to provide short-term training for overseas physicians in laparoscopic sterilization and other fertility control techniques and to arrange for distribution of laparoscopic and other equipment to qualified trainees. This program was an outgrowth of the earlier Hopkins based training program in laparoscopy and other fertility control techniques, and it grew to include the University of Pittsburgh, Washington University in St. Louis and, later, the American University in Beirut, Lebanon.

PIEGO training is now carried out at only two U.S. centers but it has expanded to numerous centers overseas. It consists of three to six weeks of didactic and clinical work in all aspects of reproductive health, of which laparoscopy training is an important part.

Provision of Laparoscopic Equipment

After the training, each qualifying trainee is visited at his or her own hospital by a PIEGO trainer or consultant who brings the laparoscopic equipment, A significant number of supervised laparoscopic sterilizations are then done by the trainee over a period of several days. When a consultant-trainer is satisfied with the laparoscopic skill of the particular trainee, a laparoscope is given to the trainee's institution (at that time USAID was paying \$4000 for each laparocator).

By September 1977, 1,161 Ob/Gyn physicians from sixty eight countries had taken this type of PIEGO training. More than one third of these physicians have since been provided with laparoscopes at their home institutions. In addition to PIEGO, laparoscopic training and equipment as well as other types of training and equipment have been provided to a substantial number of overseas physicians by the Association for Voluntary Sterilization (A.V.S.), an AID-assisted Agency based in New York City. Through September 1978, AVS had placed

227 laparoscopes with trained gynecologic surgeons in 31 countries and plans to place many more laparoscopic units around the world by 1980.

Altogether, as shown in Table I, AID-purchased laparoscopes have been distributed to trained gynecologic surgeons in 67 countries during the six years 1972 - 1978. The widespread distribution of these scopes is shown on the world map in figure I.

Tubal Bands and Clips

As early as 1971, it became clear that a crucial need for improved safety of laparoscopic sterilization overseas was a tubal band or clip which could replace electrocautery as the means of blocking tubal functions. AID funding directed toward this problem helped with development of the Yoon Band (Falope Ring) and the Hulka Clip, both of which can be applied either through the laparoscope or independent of that instrument, e.g., through a minilaparotomy incision.

In the four years since introduction of the Falope Ring applicator, this method has gained wide acceptance. It is now in use in more than 70 countries around the world. PIEGO and AVS are converting their overseas laparoscopes to include this capability. All laparoscopes being supplied by A.I.D. now have this Falope Ring capability. A shorter thumb or "gun" Falope ring applicator, used to occlude the tubes through an abdominal or vaginal incision, has also been enthusiastically received in several overseas programs.

Significance of Laparoscopy for Developing Country Sterilization Programs

It is clear that development of outpatient laparoscopic sterilization has brought about a remarkable acceleration of the evolution and application of female sterilization services. In many countries where A.I.D. purchased iaparoscopes introduced the technique five years ago, it has been extensively taught and new scopes have been supplied. In countries such as Thailand, Indonesia, Mexico, Korea, El Salvador and Tunisia, national associations have assumed the responsibility for further training and certification.

In Korea, the laparoscope has had a dramatic effect on the availability of voluntary sterilization for women. In 1974 when AID had made only seven laparoscopes available in Korea, there were 5,000 female sterilizations reported. By 1975, when 16 scopes had been provided to Korea, 14,800 female sterilizations were done. In 1976, by which time there were 71 A.I.D.funded iaparoscopes in country, 35,500 female sterilizations were reported; for 1977, when a total of 92 AID laparoscopes had been provided, Korea reported 181,500 female voluntary sterilizations, almost 90% by laparoscopy. FIEGG, AVS and AID cannot claim exclusive credit for this rapid proliferation of Korean laparoscopy because by 1978, there were no less than 327 privately-purchased laparoscopes in Korea. AID-related organizations can, however, take a full share of credit for initiating and energizing Korea's remarkable provision of voluntary sterilization services by laparoscopy.

The "Laprocator"

The most recent development in the worldwide effort to advance the availability of female sterilization in general, and laparoscopy in particular, is the "laprocator", developed in response to the interest of A.I.D.'s Office of Population in promoting efficient dissemination of endoscopic capability throughout the developing world. It is designed for use of the Falope Ring and can use either bottled carbon dioxide or filtered room air with a simple bulb-and pressure gauge.

The laprocator can also use as its light source a battery which is small enough to be attached to the operator's belt. By dispensing with bottled gas and electro-cautery it should prove possible to use this single-puncture straight laparoscope without any hazard of burns. The straight barrel reduces the number of lenses needed and improves clarity of vision. The entire system weighs less than 25 pounds, is considerably less expensive than a standard laparoscope, is more readily transportable and should therefore greatly simplify the logistics of delivering and servicing laparoscopic equipment in remote and inaccessible areas. Already countries such as Thailand, Indonesia, and Colombia have expressed interest in acquiring significant numbers of these new instruments.

This development should make it financially possible for the Office of Population, AID, to support placement of laparoscopic equipment in every requesting medical school and teaching hospital in the developing world. Many such institutions are interested in this type of equipment because of its potential usefulness in the diagnosis and treatment of infertility. AID is currently planning to fund purchase of several thousand such laparoscopic units to be provided to LDC institutions during the next several years.

Worldwide Availability of-Sterilization

Experience to date in countries such as India, Pakistan, Bangladesh, Indonesia, Thailand, Philippines, Korea, Nepal, Tunisia, Egypt, El Salvador, Panama, Colombia, Jamaica, Mexico and Guatemala has demonstrated extraordinary demand for sterilization services, especially female. It is estimated that more than 80 million couples in the world now depend on voluntary sterilization and that there are, at this time, probably that many more couples in developing countries who would control their fertility by voluntary sterilization if these services were appropriately and readily available.

With present technology, building upon training programs already substantially advanced, and with adequate planning and monetary and - commodity support it should be possible to extend the availability of voluntary sterilization services by laparoscopy, minilaparotomy, vasectomy and all other appropriate methods throughout the developing world in just a few more years.

TABLE I

AID FUNDED LAPAROSCOPE PLACEMENTS BY YEAR

COUNTRY	1972	1973	1974	1975	1976	1977	1978	TOTAL
1. Afghanistan				1	1	1		3
2. Antigua				1				1
3. Argentina							3	3
4. Bangladesh		1	3					4
5. Barbados			2					2
6. Brazil		2		3	2	1	2	10
7. Bolivia				3				3
8. Burma							1	1
9. Chile		2	3	8	14	2	4	33
10. Colombia		5	23	2			3	33
11. Costa Rica	2	3	13		3		1	22
12. Dominican Republic						5		5
13. Ecuador	1	2					3	6
14. Egypt			6	17	6	4	5	38
15. Gambia			1	1				2
16. Ghana				1	1		1	3
17. Guatemala		4	3	4	1	6	9	27
18. Grenada				1				1
19. Guyana			1					1
20. Honduras		1		1	4	3	4	13
21. Haiti				2		1		3
22. India	3	6	14	23	18	6		70
23. Iran		2		2	1			5
24. Indonesia		1	3	3	6	24	10	47
25. Jordan			1	1	1	1		4
26. Jamaica		4		4				8
27. Kenya			2				1	3
28. Kymar Republic			1					1
29. Korea		4	3	9	56	20	2	94
30. Lebanon		1		1		1		3
31. Lesotho							1	1
32. Liberia			1					1
33. Malaysia	1	1	4	3	3	1	1	14
34. Mexico		1	2	7		43	42	95
35. Morocco						1	2	3
36. Nepal	1	1	3	12				17
37. Netherland Antilles			1			1		2
38. New Guinea			1					1
39. Nicaragua				6	1	1	2	10
40. Nigeria				5		1	2	8
41. Pakistan		1	6	7	30	3		47
42. Peru		1	5	2	4	4	1	17
43. Panama	1	1			3	3		8
44. Paraguay					2	1	3	6
45. Philippines		7	36	12			1	56
46. Portugal							1	1
47. Saudi Arabia				1				1
48. Santa Lucia				1	1			2
49. Senegal				1				1
50. Sierra Leone							1	1
51. Singapore		2	3	2	3	1		11
52. Sri Lanka					1	1	3	5
53. St. Kitts				1				1
54. Syria						2	2	4
55. El Salvador	3	4	1	9	1	7	9	34
56. Sudan					1	6	3	10
57. Taiwan		2	6	1	2	1		12
58. Tanzania						1	1	2
59. Thailand	1	3	19	14	9	1		47
60. Trinidad			3	1				4
61. Tunisia				1	3		17	26
62. Turkey		2	7			4		13
63. Uruguay						2	3	5
64. Venezuela			1			2		3
65. Vietnam			1					1
66. Zambia							1	1
67. Zaire						1	1	2
	13	64	179	174	178	169	145	922

Developed Countries (USA & U.K.) = 32

Grand Total = 954

